

1 WHAT IS CLAIMED IS

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1. ~~A method of driving a liquid crystal~~
display device, said liquid crystal display device
comprising: a first substrate; a second substrate
opposing said first substrate with a gap therebetween;
10 a liquid crystal layer confined in said gap; a thin-
film transistor formed on said first substrate; a
conductor pattern formed on said first substrate in
electrical connection with said thin-film transistor,
said conductor pattern supplying an alternate-current
15 driving voltage signal to said thin-film transistor; a
pixel electrode provided on said first substrate in
electrical connection to said thin-film transistor; an
auxiliary electrode formed on said first substrate in
the vicinity of said conductor pattern so as to form
20 an auxiliary capacitance with said pixel electrode,
said auxiliary electrode being disposed so as to
induce a lateral electric field between said auxiliary
electrode and said conductor pattern; and an opposing
electrode formed on said second substrate;
25 said method comprising the step of:
applying to said auxiliary electrode a
common voltage substantially equal to a central
voltage of said alternate-current driving voltage
signal.

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2. ~~A method as claimed in claim 1, wherein~~
35 said common voltage is deviated from said central
voltage by an amount corresponding to 2/5 or less of
an ~~amplitude of said alternate-current driving voltage~~

1 ~~signal set so as to provide a maximum gradation level.~~

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3. A method as claimed in claim 1, wherein
said common voltage is deviated from said central
voltage by an amount corresponding to $1/20$ or less of
an amplitude of said alternate-current driving voltage
10 signal set so as to provide a maximum gradation level.

15 4. A method as claimed in claim 1, wherein
said central voltage is substantially zero volt.

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5. A method as claimed in claim 1, wherein
said central voltage is offset from zero volt.

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6. A method as claimed in claim 1, wherein
said common voltage is set such that a fluctuation of
a leakage light, caused by a disclination induced in
said liquid crystal layer by a lateral electric field,
30 is 10% or less.

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7. A method as claimed in claim 1, wherein
said common voltage is set such that a flow of liquid

1 crystal molecules, caused in said liquid crystal layer
by a disclination induced in said liquid crystal layer
by a lateral electric field, has a velocity of 80 μm
or less per an interval of 24 hours.

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8. ~~A liquid crystal display device, said~~
10 liquid crystal display device comprising: a first
substrate;
a second substrate opposing said first
substrate with a gap therebetween;
a liquid crystal layer confined in said gap;
15 a thin-film transistor formed on said first
substrate;
a conductor pattern formed on said first
substrate in electrical connection with said thin-film
transistor;
20 a driving circuit supplying an alternate-
current driving voltage signal to said thin-film
transistor via said conductor pattern;
a pixel electrode provided on said first
substrate in electrical connection to said thin-film
25 transistor;
an auxiliary electrode formed on said first
substrate in the vicinity of said conductor pattern so
as to form an auxiliary capacitance with said pixel
electrode, said auxiliary electrode being disposed so
30 as to induce a lateral electric field between said
auxiliary electrode and said conductor pattern;
an opposing electrode formed on said second
substrate; and
a direct-current source applying, to said
35 auxiliary electrode, a common voltage substantially
equal to a central voltage of said alternate-current
driving voltage signal.

1 9. ~~A liquid crystal display device as~~
 claimed in claim 8, wherein said direct-current source
 produces said common voltage such that said common
 voltage is deviated from said central voltage by an
5 amount corresponding to $2/5$ or less of an amplitude of
 said alternate-current driving voltage signal set so
 as to provide a maximum gradation level.

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 10. A liquid crystal display device as
 claimed in claim 8, wherein said direct-current source
 produces said common voltage such that said common
15 voltage is deviated from said central voltage by an
 amount corresponding to $1/20$ or less of an amplitude
 of said alternate-current driving voltage signal set
 so as to provide a maximum gradation level.

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 11. A liquid crystal display device as
 claimed claim 8, wherein said driving circuit produces
25 said alternate-current driving voltage signal such
 that said central voltage is substantially zero volt.

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 12. A liquid crystal display device as
 claimed claim 8, wherein said driving circuit produces
 said alternate-current driving voltage signal such
35 ~~that said central voltage is offset from zero volt.~~

1 13. A liquid crystal display device as
claimed in claim 8, wherein said direct-current source
produces said common voltage such that a fluctuation
of a leakage light, caused by a disclination induced
5 in said liquid crystal layer by a lateral electric
field, is 10% or less.

10 14. A liquid crystal display device as
claimed in claim 8, wherein said direct-current source
produces said common voltage such that a flow of
liquid crystal molecules, caused in said liquid
15 crystal layer by a disclination induced in said liquid
crystal layer by a lateral electric field, has a
velocity of 80 μm or less per an interval of 24 hours.

20 15. A liquid crystal display device as
claimed in claim 8, wherein said liquid crystal layer
is formed of a low-voltage liquid crystal.

25 16. A liquid crystal display device as
30 claimed in claim 8, wherein said auxiliary electrode
extends along an edge of said conductor pattern, said
liquid crystal display device thereby forming an H-
type Cs liquid crystal display device.

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